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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/716,991	11/22/2000	Hiroshi Yorta	356312000121	9890

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EXAMINER

SAVAGE, MATTHEW O

ART UNIT	PAPER NUMBER
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1723

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DATE MAILED: 05/20/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/716,991

Applicant(s)

YORITA ET AL.

Examiner

Matthew O Savage

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b)

## Status

- 1) ☐ Responsive to communication(s) filed on 06 March 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☐ Claim(s) 1,2 and 4-22 is/are pending in the application.
- 4a) Of the above claim(s) 9-16,20 and 22 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☐ Claim(s) 1,2,4-8,17-19 and 21 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_ 6) ☐ Other:

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The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 2, and 4-7 are rejected under 35 U.S.C. 102(b) as being anticipated by Montierth.

With respect to claim 1, Montierth discloses a monolithic ceramic filter (see FIG. 5) comprising a honeycomb structure including cells 35, the cells being of a unitary structure since they are formed by a layering technique that produces a monolithic/unitary product (see lines 25-31 of col. 10, and from line 62 of col. 5 to line 24 of col. 6 of Johnson), unitary, the cells being arranged along an elongation axis (e.g., parallel to the flow lines 40) and partitioned by a partition wall (e.g., defined by walls 37-39) formed of a porous ceramic material, wherein an increased thickness portion (e.g., the portion including parts 37 and 39 surrounding openings 36) has an increased thickness as compared to a remaining basic portion 38 of the partition wall, the increased thickness portion constituting a relaxed flow resistance portion which continuously extends from an interior of the honeycomb structure to a lateral outer wall surface 33 of the honeycomb structure so as to form a continuous flow path of reduced flow resistance as compared to the flow resistance of the remaining basic portion 38 of the partition wall within the increased thickness portion along the partition wall extending over a plurality of cells 35 to reach the outer lateral surface, the lateral outer wall

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surface extending substantially parallel to the elongation axis of the cells, the increased thickness portion continuously extending over substantially an entire axial length of the honeycomb structure along the elongation axis of the cells. The limitation of the filter being extruded recited on line 2 of the claim relates to a method of making the filter and carries no patentable weight in an apparatus claim.

Concerning claim 2, Montierth discloses the flow resistance relaxing portion as having at least one conduit opening 36 capable of discharging filtrate extending to the lateral outer wall surface 33 within the increased thickness portion.

Regarding claim 4, Montierth discloses the reduced flow resistance portion as including a plurality of wall portions (e.g., forming the upper and lower rows of flow openings 36 in FIG. 5) of increased thickness extending from one cell opening end 31 to another cell opening end 32.

Concerning claim 5, Montierth discloses a plurality of wall portions having increased thickness that extend parallel to one another (e.g., forming the upper and lower rows of flow openings 36 in FIG. 5).

As to claim 6, Montierth discloses bores 36 extending transverse of the honeycomb structure capable of functioning as filtrate discharge openings.

Regarding claim 7, Montierth discloses the bores 36 as being disposed parallel to one another.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 8 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Montierth.

Montierth fails to specify the increased thickness portion as having a thickness that is 2-5 times the thickness of the remaining basic portion as recited in claim 8, or the limitation of the increased thickness portion as having a thickness that is 1.5-10 times the thickness of the remaining basic portion as recited in claim 21, however, such a modification would have been obvious in order to optimize the apparatus with respect to the mechanical strength of the honeycomb structure required for a particular application.

Claims 17-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Montierth in view of Hoover et al.

With respect to claim 17, Montierth fails to specify the honeycomb structure as having a filtration membrane on a surface facing each cell. Hoover et al disclose the concept of providing a filtration membrane 3 on a surface of a cell defined by a ceramic honeycomb support 1 (see FIGS. 1-3) and suggests that such an arrangement permits a ceramic filter to be used in ultrafiltration processes. It would have been obvious to have modified the apparatus of Montierth so as to have included the filtration membrane

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as suggested by Hoover et al in order to enable the filter to be used in ultrafiltration processes.

As to claim 18, Hoover et al disclose an intermediate porous layer (e.g., defined by coarser particles 8) disposed between the honeycomb structure and membrane (e.g., defined by finer particles 7, 8, see FIG. 3 and lines 15-26 of col. 5).

Concerning claim 19, Hoover et al disclose the filtration membrane as being a porous ceramic having a smaller pore size than the honeycomb structure 1 (see lines 15-26 of col. 5).

Claims 17-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Montierth in view of Yokosawa et al.

With respect to claim 17, Montierth fails to specify the honeycomb structure as having a filtration membrane on a surface facing each cell. Yokosawa et al disclose the concept of providing a filtration membrane 5 on a surface of a cell defined by a ceramic support (see FIGS. 1-3) and suggests that such an arrangement permits a ceramic filter to be used for ultrafiltration, reverse osmosis or gas separation of pharmaceuticals or food. It would have been obvious to have modified the apparatus of Montierth so as to have included the filtration membrane as suggested by Yokosawa et al in order to enable the filter to be used in ultrafiltration, reverse osmosis or gas separation of pharmaceuticals or food.

As to claim 18, Yokosawa et al disclose an intermediate porous layer disposed between the base structure 1 and membrane 5.

Concerning claim 19, Yokosawa et al disclose the filtration membrane as being a porous ceramic having a smaller pore size than the base structure 1 (see from line 66 of col. 2 to line 16 of col. 3).

The rejections under 35 U.S.C. 112, second paragraph, of claims 2 and 3 set forth in the prior office action (paper#10) have been overcome by Applicant's amendments (paper#12) to those claims.

Applicant's arguments filed 3-6-02 have been fully considered but they are not persuasive.

Applicant argues that Montierth fails to disclose a partition wall having an increased thickness portion as compared to the remaining basic portion, however, it is held that the composite wall made of wall segments 37 and 39 and defining the openings 36 constitutes an increased thickness portion relative to the remaining basic portion defined by walls 38 (see FIG. 5). Applicant should note that the thickness of the increased thickness portion is equal to a vertical height of the wall segment 39 plus twice the thickness of the wall segment 37 which is obviously much greater than the thickness of the walls 38.

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

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A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Matthew O Savage whose telephone number is 703-308-3854. The examiner can normally be reached on Monday-Friday, 7:00am-3:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wanda W. Walker can be reached on 703-308-0457. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9310 for regular communications and 703-872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.



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*M. Savage*  
Matthew O Savage  
Primary Examiner  
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May 16, 2003